

OPTIMIZATION OF THE HORMONAL STATUS OF THE CULTURE MEDIUM FOR *H. RHAMNOIDES* IN VITRO CULTIVATION

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Sea buckthorn (*Hippophae rhamnoides L.*) is an ancient crop that has traditionally been used as a medicinal plant, health promotion agent and dietary supplement. The fruits of sea buckthorn, which are a source of carotenoids, which had been collected since ancient times and was introduced into cultivation only at the beginning of the 20th century. Currently, sea buckthorn berries are harvested on an industrial scale, as due to the high content of biologically active substances in them, consumer interest in sea buckthorn products has increased significantly, and their use in the food industry and medicine is expanding. Due to its biologically active compounds, high content of vitamin C, flavonoids, carotenoids and tocopherols, sea buckthorn is an excellent raw material for functional foods.

The purpose of this work is to select conditions for cultivating explants of *H. rhamnoides L.* plants and obtaining micro-shoots for subsequent microclonal reproduction.

The material for initiating a sterile culture was the seeds *H. rhamnoides*. The samples were introduced from natural populations in the RSE “Altai Botanical Garden” of the SC of MoES of the Republic of Kazakhstan (Ridder).

Solutions of 0.1% sulema, 34% hydrogen peroxide, and 10% Domestos solution were used for seed sterilization, the exposure period was 20 minutes. Next, the seeds were planted on the surface of the WPM and ½ MS nutrient medium with the

addition of phytohormones 6-benzylaminopurine (BA) and gibberellic acid (GA₃) in various concentrations. Activated carbon in an amount of 2 g/l was used to reduce the accumulation of polyphenols in the medium.

The beginning of germination was noted on days 7-8, depending on the genotype of sea buckthorn. The minimum number of infected seeds was observed in the variant using 0.1% sulema. When using hydrogen peroxide, the contamination of seeds with fungal and bacterial infections was at the level of 40.8-45.5%. The largest number of germinated seeds were observed when using WPM medium.

The maximum values of seedling length were noted on WPM media with the addition of 1 mg/l BA + 1 mg/l GA₃, where the average shoot length was 8.6±0.9 cm. In this variant, sterile seedlings were characterized by an intense green color and well-developed cotyledon leaves. In some genotypes, intensive growth and the appearance of a second internode were noted. In other variants, height indicators varied from 3.2 cm. up to 4.2 cm.

Thus, we have found that WPM medium supplemented with 1 mg/l 6-benzylaminopurine and 1 mg/l gibberellic acid is better suited for obtaining sterile shoots from *H. rhamnoides seeds*.

The obtained sterile seedlings of *H. rhamnoides* will be used *in vitro* culture for subsequent microclonal reproduction.